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ENTER'S AVIATION MAGAZINE

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June 2000

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Don't Worry About That C-5 in Front

Do You Smell Smoke?

Our Massive Prop-Overspeed Flight

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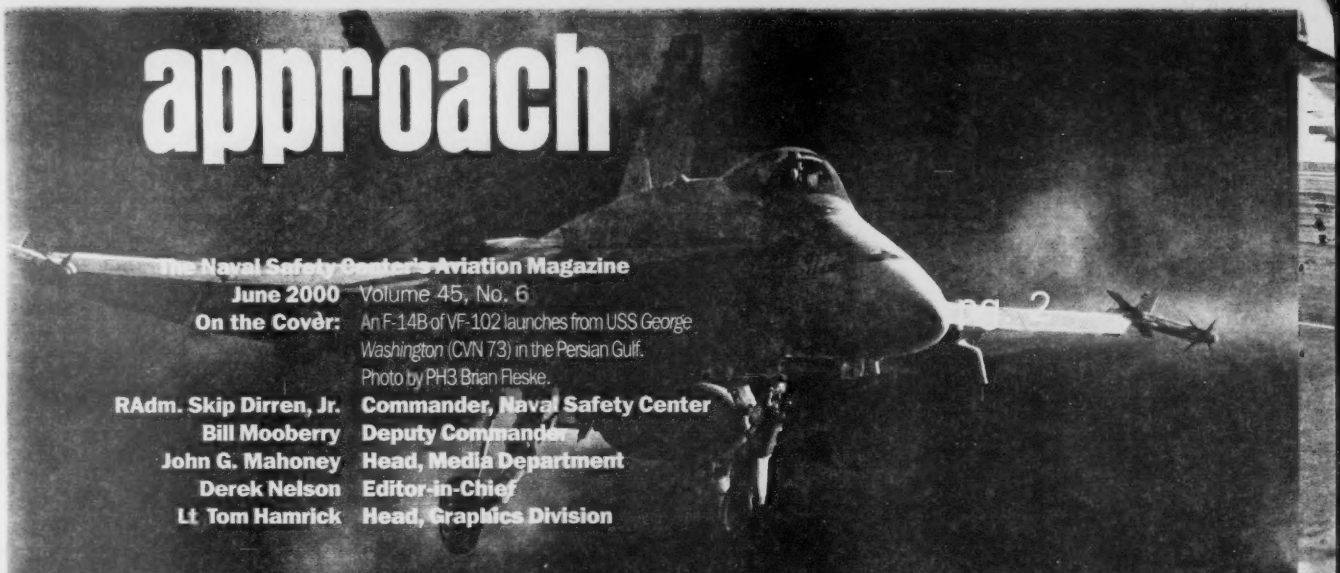

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On the Cover: An F-14B of VF-102 launches from USS *George Washington* (CVN 73) in the Persian Gulf. Photo by PH3 Brian Fleske.

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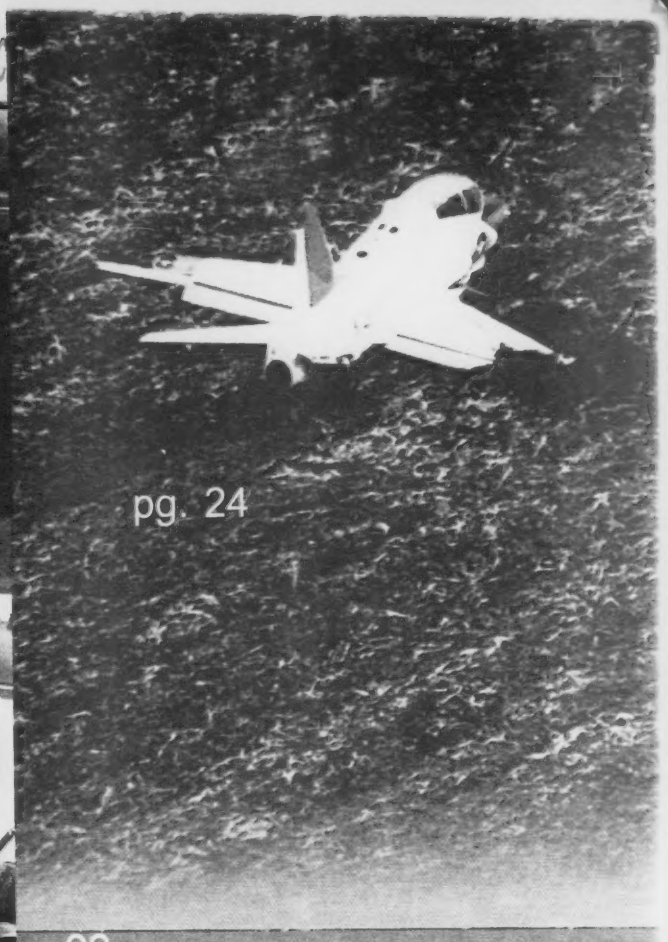

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Bingo— That's Hard, Isn't It?

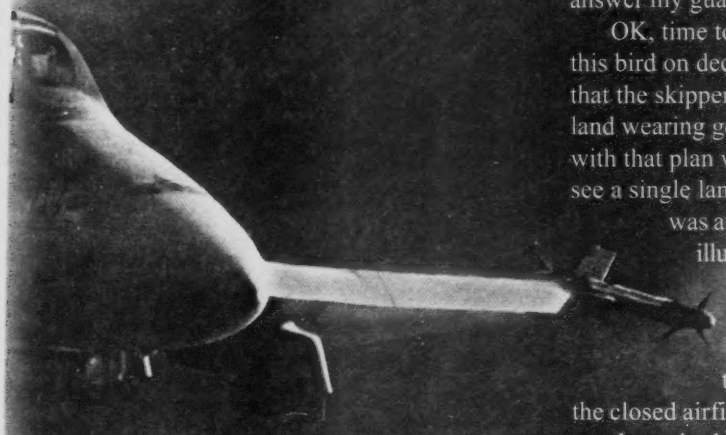
by Lt. Max Waddoups

"Aircraft at a mile, wave off, foul deck," the landing signal officer said calmly—the beginning of a very exciting, demanding and lengthy flight. Along with Gunslinger 412, I had the great pleasure of diverting to a Greek airfield on the darkest night ever.

A mere half-mile from S-3 gas, my fuel indicated I was bingo. I told departure my state was 3.8, and they quickly replied that my signal was, "Divert, pigeons bear zero-five-zero for one hundred seventy."

I turned and put mark 9 (an INS waypoint) on the nose and accelerated to my climb airspeed for the bingo profile. Shortly after squaring away some profile concerns, I yelled a few expletives to relieve the built-up tension from the 15-minute circus that had placed me in this position. Then we were off to Greece.

The cruise segment of the bingo profile allows time to take care of some administrative tasks. I took full advantage by double-checking waypoints, looking through the NVGs at the land mass that was 100 nm in



front of me, and contacting Andravida Approach. Well, I thought I was contacting them, but nobody answered. I urgently typed in the UHF frequency for the tower and made a quick transmission. No one was home. I tried VHF, still no dice. I asked the E-2 to give the Greek ATC fellows a try, but they had the same luck.

"Maybe we're too far away," I thought. I asked the rep if the divert field I was headed for was open, and, if not, where was the next closest piece of concrete where I could land? They quickly replied, "We're checking, Rooster."

At 80 nm, my fuel was at 2.1, and I was feeling anxious. The fuel-low caution illuminated, and I snapped at Betty. "Yeah, yeah, I know!" The bingo numbers at night add 0.5 for safety, which should place you on deck with 2.0. I was at 40,000 feet and still 20 nm from my idle descent point with a 2.1. Not a bad amount of gas if the airfield you are diverting to is actually open. After that quick diversion from the real problem, I repeated the drill of checking every frequency for an answer. The representative called shortly with some great news: the only field I could make would be Andravida.

I pushed over from my descent point at 60 nm, with both throttles near idle and the nozzles puckered. At 1.9, I was wondering when those Greek controllers were going to answer my guard calls!

OK, time to come up with a plan to get this bird on deck. The rep called and relayed that the skipper had given permission to land wearing goggles. My only concern with that plan was the fact that I could not see a single land feature on the island that was at my 10 o'clock, and the illumination was less than 1 percent. But I didn't have too many better ideas.

Passing 28,000 feet, the gas thing (along with the closed airfield thing) started to worry me. I was looking at 1.6 on the gas and thinking that I should be on deck already. Still working frantically to raise someone ashore on the radio, I continued toward a distance at which I could start using the air-to-ground radar features of the Hornet.

My first nav-designation of the airport waypoint was in the water. A quick retype of the coordinates and again the radar was showing the point in the sea about 3 nm from the Greek homeland. Hoping for a litte luck, I slewed the designation blindly toward land to see if I could grab a find. No such luck. I then quickly typed the TACAN channel into the UFC. After a long two minutes, the needle was still spinning without a lock. So much for shooting that nice, straight-in approach.

I got my second caution at 22,000 feet with 1.2 on the gas. The RT BOOST LO caution illuminated. Great, I thought to myself, with my mouth starting to get dry. I tried the radio again, another radar look, and then switched to the VHF tower frequency and clicked the mike seven times (pilot-controlled lighting for those of you who haven't flown a C-152 at night) to no avail. I was running out of options and gas. With very little fuel remaining and feeling completely frustrated, I radioed the ship on the strike frequency.

"I'm at eighteen thousand feet, I've got nine hundred pounds of gas and no runway. You better send the damn cavalry now."

Between 18,000 and 10,000 feet, I ran through my options. The most important concern was where to eject. It wasn't exactly spelled out in NATOPS as a boldface procedure, but common sense gave me this equation: no gas + no runway = eject. I could see a small town about 20 nm ahead of the aircraft. Surrounding the village were very few lights. I continued toward land, knowing it would take a helicopter at least two hours to reach my position. Time and gas were passing quickly, but I still had a chariot, and I was still in my comfortable little environment.

Finally, I got a radio transmission from a controller who had a strange accent. For a Texan, understanding a Greek can be challenging. But for this Texan that night, the controller and I spoke the same language.

I said, "Turn the runway lights on."

"They are on" he replied, as I descended through 8,000 feet, about 600 pounds of gas and a new caution: RT AMAD. For those of you aviators who have been Magellan during the entry to a night FCLP (at Whitehouse or Fentress, for example), you know how hard it is finding an unfamiliar field at night without a TACAN or an INS waypoint, since mine decided to drift 5 to 6 nm. I was heading east trying to find a north-south runway. The city was directly below me, and I was sweeping the area from left to right. I found two rows of lights that appeared to be the right size just passing my nine o'clock position.

Andravida was only supposed to have one runway, but with no other choices or great ideas, and with thoughts of chicken coops in Florida, I placed the lights on the nose. They were still three degrees below the horizon. The jet was still at idle and gliding quite nicely at the time.

Approaching approximately 5 miles, I called the tower and told them to roll the emergency gear and that I was not sure I would make the runway. At 2 miles, I bumped the throttles up slightly to give myself 250 knots again as I had slowed to about 200 in the glide. I lowered the gear and extended the flaps to full. The runway was 10,000 feet long and well within my reach now.

I touched down (still at idle) about an estimated 2,000 feet from the end with a nice (no trim) flare and 260 pounds of JP-5. Just after the Hornet wiggled on touchdown, the right engine flamed out and restarted automatically.

My struggles weren't over, so I quickly slowed the aircraft to taxi speed. Then I asked the tower where they wanted this "broken" aircraft and told them that I didn't have much gas (150 pounds to be exact).

They told me to go "to the end, take a left, and follow the fire truck." Well, I made it to the end and then took the left, but the aircraft quit there, indicating 50 pounds.

After exiting the aircraft with the overpowering smell of JP-5 and steam coming from the right engine, it was hard to maintain my composure. How could I be mad when I was standing and not hanging from a tree, and how could I be happy when I went through 30 minutes of pure hell? The colonel who met me at the aircraft spoke English and settled the firemen down. Then we proceeded to the tower to talk to the E-2.

I let Closeout know I was safe on deck and then talked to the tower controller for quite a while. "Why did you not tell us you were operating tonight?" he asked. All I could do is shrug my shoulders.

Two nights later at a huge Greek festival, I heard the story about how the airfield magically opened. The only approach facility open 24 hours in all of Greece is in Athens for their international airport. The bells and whistles had gone off from my emergency squawk, and the approach controller tracked my flight path. When he saw I was descending for Andravida, he got on a phone patch to the tower watch and told the tower duty that he had an emergency aircraft headed his way.

So, why did I have to go to the tanker in the first place? Let me summarize the events around the carrier: First, the boat had been behind schedule on launches and recoveries all day and night. Second, the boat had an aircraft stuck in the landing area on cat 3 for the first five aircraft down the chute. Third, the aircraft was stuck because they tried to taxi it clear (after three attempts to get him airborne) with the holdback still in tension. With brakes released, the aircraft went backwards and jammed the holdback into the zipper. And fourth, at the abeam, I was told, "Signal tank, take angels two point five."

It turned out my tanker was at 4,000 feet but I never found him. Four other Hornets were also up departure for tanker support and CATCC was more than overwhelmed.

A maintenance detachment and an FCF pilot were sent to repair the aircraft. After a successful flight the following day, the FCF pilot (a great American who was also the CATCC representative during the divert) scaled down the boarding ladder. He turned to the maintenance troops and me and said, "The jet is up, and I've got to tell you, I've never strapped on a jet where the bingo bug was set at zero."

This was quite an experience. No CV, no divert field, and a fuel leak on a bingo profile at night. Lucky for aircraft 412 and me, there was no weather and that unknown Greek approach controller was on top of his job. The fuel leak that manifested itself came from the O-ring that attaches the main fuel-control unit to the main fuel-boost pump. This leak, plus fuel burn at idle, released approximately 400 pounds of precious JP-5 every three minutes. The scariest discovery was that the entire right engine bay (with the engine running) was half full of JP-5, as evidenced by sparkling clean engine-bay doors.

As for lessons learned, here are a few that apply to the air wings that operate utilizing foreign diverts in the Mediterranean. When foreign airport-approach plates indicate they have a TACAN, it could be a generator-powered, mobile unit that has to be started somewhere in the middle of the runway.

The PAR is probably powered off the same generator and is in a truck that has to be manned before operation. Many foreign airfields have the option to light their taxiways as runways to use in case of an emergency. Most foreign airfields are closed from sunset to sunrise.

Finally, Greek festivals can be quite enjoyable.

Lt. Waddoups was assigned to VFA-105 at the time of this story. He is now an instructor pilot with VFA-106.

Don't Worry About That C-5 in Front—They Must Be Circling To Land

Anonymous

It was a normal preflight, just like the many others we'd done during our detachment to a foreign airfield. The planeside brief was complete, and we were copying down the ATIS information. Information "Alpha" was current, reporting the winds 140-to-160 degrees, 5-to-10 knots and runway 28 left active. Before taxiing, we contacted Metro to update the weather forecast; we were going to take off at maximum recommended gross weight (135K). Metro reported the winds 140 degrees at 10 knots. I was the pilot at the controls. We started the engines and got taxi clearance for runway 28 left, the duty runway. However, because of the unfavorable winds and our weight, we asked for departure on runway 10 right. Subsequently, our requested taxi clearance was granted for runway 10 right.

As we taxied, we completed all our takeoff preparations, and the crew was ready to go. We approached the hold-short, contacted tower on VHF No. 1, and requested our IFR release.

Tower said, "Line up and wait, runway ten right." Having the luxury of an extra VHF radio in our aircraft, we had already been monitoring the approach-departure frequency on VHF No. 2. As a result, we were aware of a C-5 on approach to runway 28 left, between 1 and 7 nm away.

After getting our lineup instructions, we saw the C-5 on approach approximately 12 nm to the reciprocal runway, 28 left. Awaiting takeoff clearance, we assumed that the C-5 was going to circle to land on runway 10 right, based on the current winds and the fact that tower had cleared us to lineup. After a short delay on the runway, tower cleared us for takeoff.

We reviewed our takeoff performance numbers and then began our near-fatal takeoff roll, ignoring the hard-to-miss C-5 in front of us.

At approximately 90 knots with 5,500 feet of runway remaining, I watched the C-5, then 3 to 4 miles in front of us, continue its descent for landing. Realizing the imminent danger, I initiated an abort. Concurrently, the tower told us to "Abort takeoff." Also, the approach-departure controller directed the C-5, now on short final, to "execute missed approach."

We taxied clear of the runway, composed ourselves, and taxied back to the approach end of runway 10 right for an uneventful takeoff. Meanwhile, the C-5 circled south of the field and executed a visual approach to runway 28 left.

After this unnerving incident, we conducted an in-depth investigation to understand this incident. The approach-departure controller had cleared the C-5 to land on runway 28 left without authorization from the tower, while they simultaneously granted the tower permission to release us for takeoff from runway 10 right. In doing so, the approach-departure controller didn't recognize the imminent conflict between the opposing C-5 and us. Ultimately, the foreign ATC review board found the approach-departure controller at fault and suspended him indefinitely.

Armed with this information, I felt like justice had been served. The controller was responsible for placing us in a near-fatal position. However, once I thought about it, I felt silly. How could I have ever dreamt of taking the runway and starting takeoff roll without clarifying with the tower that the C-5, a hard aircraft to miss, was in fact going to circle to land. This entire incident could have been avoided if I, or another flight station crew member, had insisted on clarifying the C-5's intentions. It would have only taken a second to query the tower controller before ever taking the runway. It was a tough, embarrassing lesson for everyone, especially me.

After Three Decades, I Get a Wish

Being associated with *Approach* was the farthest thing from my mind in 1968 when I entered the Navy. I barely knew what the name was. But, I've spent more than 30 years in naval aviation as an editor, historian, author, book reviewer, and naval reserve officer. Now, it's time to hand over the controls to someone else. I don't regret stepping down; it's time to move on. But, I'm thankful for the chance to have worked on *Approach* for the last 16 years.

There's a reason why Navy and Marine Corps wings mean so much, and why as the current operators you must preserve that heritage. Sometimes we do dumb things; sometimes we live in spite of ourselves. We must never stop looking around and checking our individual and collective actions. It's the only way to survive. *Approach* helps us question, learn and remember, whether it involves something that happened one year ago or 20 years ago. Usually, the lessons go beyond a statute of limitations.

I want to simply wish all of you the best and safest careers you can have. I hope that you find the satisfaction and dedication to your jobs and craft I have. It isn't always easy, nor is it always clear what you're accomplishing at any time. But you can and do make differences depending on how you conduct yourselves as members of the Navy, Corps, or Coast Guard, and how you fly your aircraft, whether as pilot, NFO, or crewman.

Above all, remember that *Approach* is your magazine. Keep contributing those stories that make it the best safety magazine in the world.

Peter Mersky

by Ltjg. Mitch Hobbs

We had just settled into what would be four months of operating in the Persian Gulf. I was Dash 3 of a three-ship supporting a target-familiarization flight in what is known as "The Box." It was night, and I was looking forward to actually seeing the anti-aircraft artillery that my air-wing brothers had already seen first-hand with their night-vision goggles.

Climbing through 10,000 feet, I donned my NVGs to find the tanker track, approximately 50 miles away. I didn't feel any air coming from the air ducts in the cabin. I glanced at the cabin-pressure gauge and was glad to see the cabin was pressurizing. I cycled the cabin-temperature knob in manual, in an attempt to return airflow, without any luck.

"Just one more discrepancy to fill out and give to maintenance," I thought.

During the rendezvous, I was a little nervous because so many strikers were all heading for two KC-10s only 1,000 feet apart. I made my approach. Once on port observation, and number one for the hose, I slid behind into the pre-contact position. The refueling basket was only a few feet away, but it was oscillating up and down about three feet. Once I saw that, I knew that the next couple of minutes would be extremely trying. I waited for what seemed like three minutes for the basket to stabilize, but it never settled down.

With three jets waiting for me to finish tanking, I knew I had better give it my best try. The oscillations dampened for a moment. I pushed the throttles to military power, and the jet surged forward. Applying a little left rudder for lineup at the last second, I watched in amazement as my probe hit brass-to-brass in the center of the basket. With the join completed, all I had to do was worry about the excess closure I had built up in the process. I pulled the throttles to idle as the hose reel took up slack faster than I had ever seen.

Suddenly, I felt extreme pressure in my ears as the airflow increased. With gale-force winds blasting throughout the cabin, I concentrated on stabilizing while on the hose. The pressure increased until I felt my eustachian tubes painfully opening, trying to equalize the pressure. Two thoughts ran through my head: I could either detach from the tanker and sort things out, or ride it out and hope for the best. I chose the former but as I backed out, the ECS returned to normal. With no reason to disengage, I took my remaining fuel with no further problems.

During the climb, with the throttles at military power, I began to doubt my senses. I thought about the head colds going around the ship and decided my recent experience was a result of my catching the bug. With only a few miles until joining my flight lead and leveling off at nearly 30,000 feet, I gradually pulled the throttles back to the mid-range position.

As the engines spooled down, I felt the same sensation I had while on the tanker: the pressure increased and my ears hurt. Several seconds elapsed as I frantically thought about what to do. I searched my brain to come up with something other than selecting the ram-dump feature of the ECS, which would instantly lower the cabin pressure. At the five-second mark, the pressure gradually began to subside and I continued to troubleshoot. I selected the manual ECS mode and cycled the throttles again with the same results.

After this third time, I made up my mind to avoid cycling the throttles at all costs. With the joinup completed and the pressure seemingly stabilized, still without much ECS airflow, I knew I could continue with the flight. I wondered whether it was my sinuses or the aircraft as I gingerly moved the throttles. I finished the route and headed home.

With a gradual descent into the marshal stack, I convinced myself that my sinuses must be the source of the problem because I

Overpressure in "The Box"

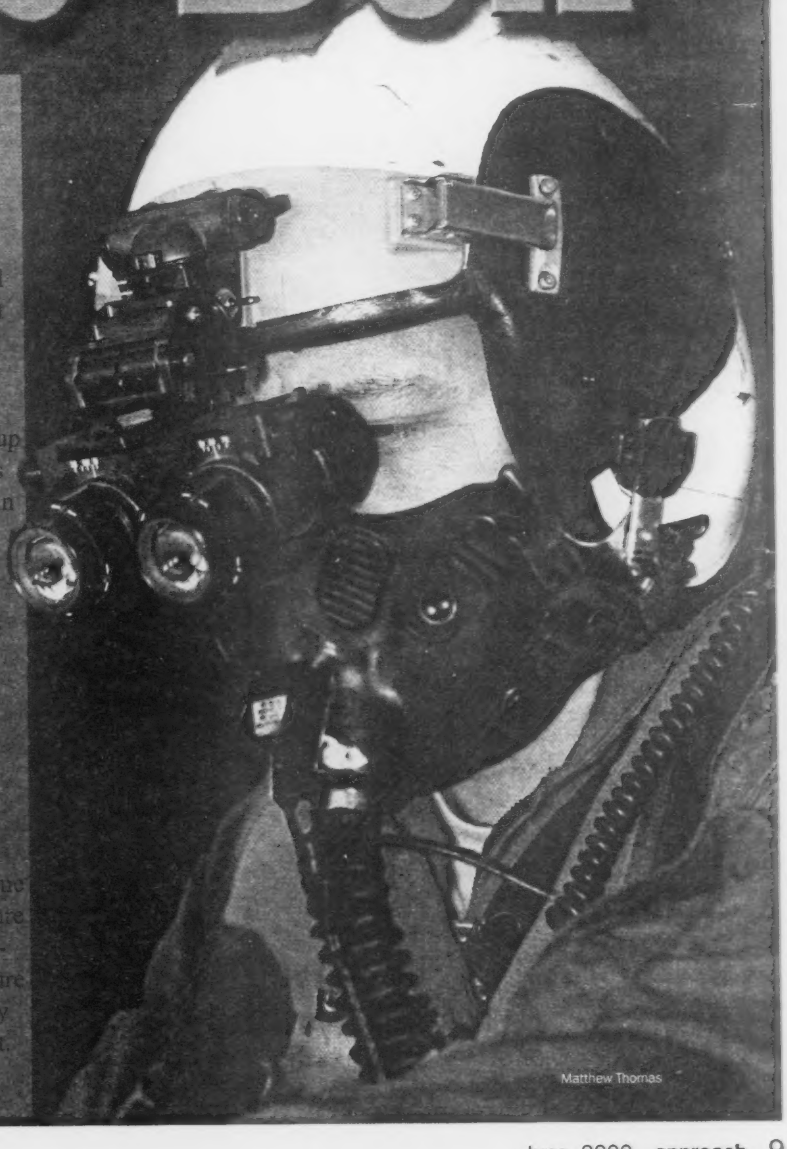
was feeling better. I removed my mask and attempted to valsalva. I cleared my ears perfectly but still was not confident about my nasal passages.

I described my experience to the troubleshooters after landing, and they said that they would have the next pilot check it out. With that in mind, I was off to fill out my flight time and then see the flight surgeon. I talked with the maintenance chief about my situation, and he said to write it up anyway. I did just that, and the aircraft was signed out to another pilot minutes later. An hour and a half later, the same plane, with the same problem, returned.

That pilot and I discussed our experiences and concluded that it was indeed the airplane. I was glad to know that I didn't have a sinus problem, but it bothered me that I had let that aircraft return to service without knowing exactly what happened during my flight.

The next day I dropped by the maintenance department to see what they had found out about the plane. The chief told me that both the primary and the safety pressure regulators were clogged with debris. Without a valve being able to reduce the pressure normally, an overpressure situation exactly like the one I had experienced could result.

Maj. Bobbi Jues with YF-A-36



Matthew Thomas

The Wrong End Zone

by Lt. Charlie Brown

Fallon SFARP. Unit-level, air-to-ground training that signaled the start of our work-ups. Our first mission was an opposed, section low-level through the Nevada desert. The route would drop us off in the B-20 bombing range complex, where we would drop two Mk-82s on "Lone Rock."

The brief covered all the necessary items for the route, and we looked at target-area diagrams, as well as close-up photos of the Rock. Everyone said the target stood out and would be easy to find. Besides, having dropped in that target area during our previous work-up, I was sure we would find the correct target.

You'll appreciate the fiasco that follows using a football analogy. It's the fourth quarter: 30 seconds to go, you're behind, and they have the ball.

The route went well. We trounced our airborne opposition and were right on time. On the northbound leg, located west of the target area, I could see the elevated target. We still had almost 10 minutes to go. As we approached our 10-mile IP, my RIO called, "Tally the target." I agreed.

The center hikes the ball for the final play, but there is a miscue between him and the quarterback; the ball is on the ground!

We "tac turned" into the target area and started our 30-degree climb to get to our pre-briefed delivery roll-in altitude of 23,000 feet. In the climb, I became slightly sucked on the lead as I started to timeshare between formation flying and scanning in the target direction. I also noticed there was a thin layer of clouds above that looked lower than our planned roll-in altitude.

As we hit 19,000 feet, I lost sight of my lead for a moment and leveled off back at 18,500 feet. I quickly found him again and realized I was now out of position on my lead. I still had the target in sight.

There's a mad scramble for the ball, but it shoots out of the pile right into your hands. You take off for the end zone!

I flattened out at the top of my delivery profile as I heard my lead call, "Off, no drop." SWATSLANT instructors were evaluating this hop, so I thought, "That can't be a good thing."

Once in my dive, I saw my pipper rapidly approaching the target and actually go through the aim point. My hits might be

a little long, but bombs would come off first pass.

You've juked two players and have a free shot for the score...only a few more steps.

As I pulled off, I looked back and saw the bombs hit just long of the target. My RIO said, "Uh, oh." Then the range-safety observer said, "Do not bomb wing's hits. They are out of the live-impact area!"

You cross the goal line just as you are tackled...in your own end zone. You lose!

What the hell happened? Turns out we put two Mk-82s close to a building in the light-inert area of B-20, several miles north of our intended target. From my review of the events, I counted seven links in the chain of this near mishap.

1. Easy target. Yes, I saw some target photos and looked at a target area diagram. I didn't study what could draw me off the target I was going after.

2. Tally the target. Before reaching the IP, my RIO and I both called, "Tally the target," 10 miles away at 1,000 feet. At the time, we never discussed whether we were looking at the same target nor did we discuss target acquisition after that point. In this case, the target looked very different at 19,000 feet compared to 1,000 feet.

3. Soda straw. After seeing the height of the target from the IP, I bought off on a target that was in line with Lone Rock, but well short of our run-in line. My scan broke down as I approached the target because of my splitting concentration between flying formation and the approaching cloud layer. During the climb, I should have been asking myself how I could be sure it was the target.

4. Weather. Not being able to deliver from our pre-briefed parameters is reason enough to take it around to try again. There was no reason to press this delivery during a peacetime mission.

5. Formation. If I had been in proper formation, I would have recognized that we were rolling in on different targets.

6. Crew coordination. When we hit the cloud layer, my RIO became more concerned with clearance within the section, and once I called, "Tally," he just started giving me delivery information (dive angle, airspeed, altitude), instead of being heads out trying to see where we were aiming. The RIO also has bearing and range information to the designated target. If we had been looking at that information, we would have seen that our roll-in point was well short of the intended target.

7. Mindset. Bombs on target, on time, first pass. How many times have we heard that? After I heard lead call, "No drop," I felt greater pressure to get something off to continue with our (thus far) successful hop. But no training hop, especially with live weapons, is worth mistaking a target for the benefit of bombs off, first pass.

Breaking any one of these links could have stopped this near–catastrophe from happening.

No amount of preflight target study is too much. A division had gone out on the same hop earlier that morning. They certainly had HUD footage that could have been used by any of us to show what we could expect to see in the target area.

Scan around the target. Not only can you confirm other geographic references to verify the target, but real-world threat missiles and AAA probably won't be coming from the target under your crosshairs.

Once off briefed delivery parameters, you should really be asking yourself why you should continue with this delivery. Frag wasn't a player for us with this delivery, but what about those on the ground?

On target, on time is a level to train to, but not at the expense of safety.

We were fortunate that the bombs did fall on the range and no one was hurt. We all know that has happened in the past. I never thought I would drop on a misidentified target, and I took a hard look at what made me do it this time. Don't fall into the category of "it will never happen to me."

Lt. Brown flies with VF-11.

Our Massive Prop-Overspeed Flight

by Lt. Brendan Berry

The day started out quietly: a routine NATOPS check for the flight engineer (FE), an observer NATOPS check, then landing practice for the IP and me.

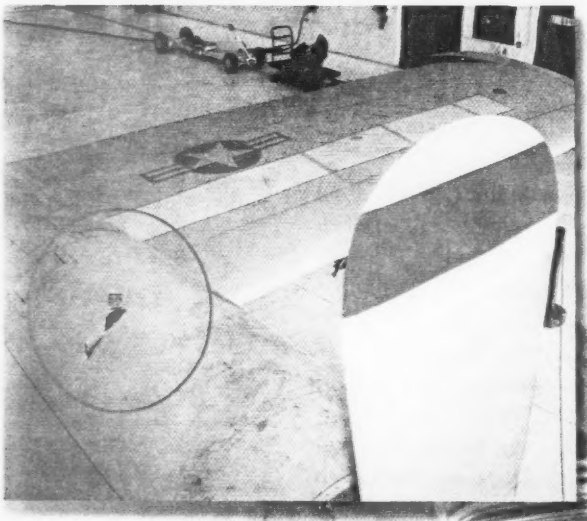
After takeoff from runway 6, we encountered an overcast layer around 1,400 feet, breaking out VFR on top around 4,500 feet. We started negative-torque sensing (NTS) checks, completing No. 1 and No. 4 engines with no problems.

Passing 6,200 feet in a left turn, the FE started to pull back the No. 2 power lever for the NTS check when all hell broke loose. The aircraft lurched to the left as if a speed brake had deployed on that side, and the plane started buffeting and shaking heavily.

The flight station was instantly filled with a deafening, rasping, angry noise, as if a chainsaw had been started at full throttle. At the same moment, smoke and fumes started to build up in the flight station and in the tube, followed by loud popping noises along the fuselage. A scan of the gauges for No. 2 engine and quick investigation revealed that we had a pitchlocked, decoupled, gauge-limit propeller overspeed. The prop-rpm gauge was pegged at 129 percent.

We had no internal and external communications. The FE and IFE quickly turned off the No. 2 generator, then fully opened the oil-cooler flaps because of the instant OIL HOT light on No. 2. Then they disconnected the No. 2 engine-driven compressor (EDC), which, as a result of being mounted on the No. 2 reduction gearbox, had oversped and come apart, causing the smoke and fumes. Screaming was the only way to communicate with the FE in the seat; cross-cockpit communication between the pilots was limited to hand signals.

The IP in the right seat took the controls, and I took the comms. Turning to look out the window at No. 2, I was shocked to see that the prop-spinner cover was gone, as were parts of the propeller deicing cuffs and islands. There was a large gash in the top of the No. 1 engine nacelle, but all cockpit indications showed that engine was operating normally.



We declared an emergency and requested vectors for a GCA back to runway 6. After a couple of transmissions, we finally understood to turn right to 270 and descend to 3,500 feet for a PAR to runway 6, which I had to pass to the other pilot with hand signals.

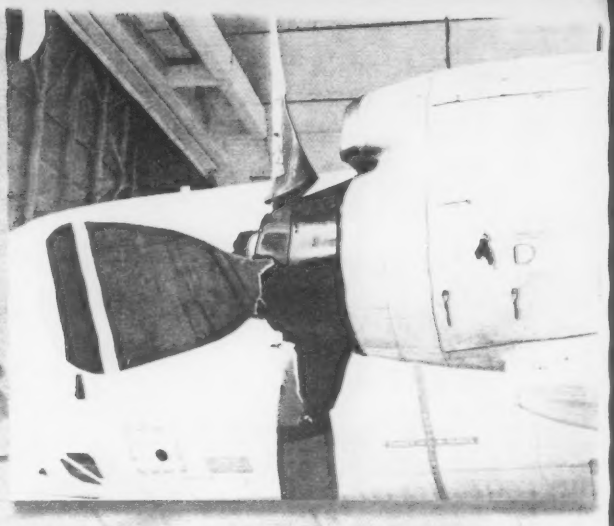
We were only 5 miles from the field. Although we had already done the initial steps of the emergency procedures, the FEs broke out NATOPS and started going through the prop procedures, which was extremely difficult because of the noise level. We slowed the aircraft, dramatically reducing the noise and vibration, improving control, and allowing us to talk, even though the rpm was still pegged at 129 percent.

We briefly discussed donning our helmets but decided against it because we were close to the field and the decreasing airspeed had lowered the noise level. Once we had finished the emergency procedures, we went through the descent and approach checklists and briefed our approach and landing.

We broke out around 1,100 feet, acquired the field, and requested a visual straight-in. The flaps were already at approach, so we dropped the gear and did a slow-flight check. The prop rpm finally came off the peg, slowing through 145 knots, 3 miles out on final, and the other engines had 2,000 SHP set to overcome the drag from the overspeeding prop.

We touched down before the 10-board, smoothly lowered the nosewheel, and fuel-chopped No. 2 once we were firmly in control of the aircraft on rollout, as briefed.

Postflight revealed the prop had oversped to 165 percent, although the gearbox is only guaranteed to 115 percent by the manufacturer. The spinner and much of the deicing cuffs and islands had separated and struck the fuselage at several points, causing dents and the popping noises we heard. The No. 2 EDC had had an uncontained failure, sending shrapnel throughout the inside of the No. 2 nacelle, puncturing the nacelle in several places, and also sending a large piece through the top of the No. 1 nacelle, bouncing off the oil tank mounted on top of the engine.



One important lesson we learned as a crew is how difficult aircrew coordination becomes when a large barrier to communication is introduced, as the noise level was in this scenario. Overcoming both the initial shock at the sudden nature of this extreme malfunction and the confusion caused by the various, simultaneous events was a formidable challenge, which made ACT hard. Once we figured out exactly what had gone wrong, we adapted to the situation and got back on deck.

This emergency also emphasizes the importance of knowing your systems and emergency procedures. Although the P-3 community trains to "break out" the NATOPS manual and read and review the procedures, the racket and subsequent difficulty communicating forced us to depend on our knowledge of emergency procedures to complete the steps and land the aircraft.

Lt. Berry flew with the Naval Force Aircraft Test Squadron.

Concentrate on the ABCs

by LCdr. Dan Lee

Our mission was simple: sunny, clear, daytime carrier qualifications in the southern California operating areas. The only thing complicating the scenario was the timing. It was early in our IDTC and our first period back to sea in several months. Even though everyone wanted to do well, we had emphasized taking things slow. We needed to learn how to walk again before we could run. "Concentrate on the ABCs" was the motto.

During the first day, the deck was busy, even though we were working only three Hummers and a half-dozen Hornets. The deck was clear because everyone else was going to fly out in the following days. After bagging a few traps, we needed gas before getting another pass for the pilot to finish his day qual. We trapped, then taxied clear of the landing area, then aft on the street and then turned to face the LSO platform, stopping just forward and to port of the island.

While we refueled near the Six Pack, the deck kept working several Hornets from the landing area, toward elevator 2 and then forward to wait in line for cat 1. During one of these maneuvers, a yellowshirt turned a Hornet a little too close to the Hummer's tail with a little too much power. Our E-2 shuddered. It felt like we had been crunched.

After filling up, we taxied forward and joined the queue for cat 1. We were directed into position for launch, crossed the jet-blast deflector, and spread the wings. The final checkers verified aileron deflections. When the shooter looked aft, the final checkers gave him a thumbs-up. Then he looked forward before touching the deck.

Just as the shooter was turning to look forward, the Hawkeye flight-deck coordinator (FDC) noticed what appeared to be excessive movement of the lower port rudder tab and a small tear in the upper edge. He immediately signaled to suspend the launch, but we were already on our way. We launched and turned to enter the Case I pattern for the last trap of the period.

The FDC quickly contacted the tower, which passed the message about the suspected damage along to our aircraft. The aircrew did not

feel any controllability changes and trapped.

After landing, we checked the rudder and downed the aircraft because of a three-inch tear in the lower port rudder tab. The rudder-tab-linkage fitting had also been sheared, disconnecting the rudder tab from the flight controls.

Investigating the incident included interviews and examination of flight deck and plat tapes to identify how and when the damage occurred. Unfortunately, none of the recordings captured the incident, leading to the conclusion that the damage occurred while we were refueling. The shudder we felt could only have been caused by a Hornet's exhaust, which forced the Hummer's rudder from 20-degree throw limits to nearly 80 degrees. It hit the adjacent elevator tab.

Writing the hazard report on the incident, I struggled to identify the most important points to be made that would benefit other squadrons. Was it that excessive power was used to taxi on the flight deck or that an aircraft was directed too close to another? Had our aircrew and deck personnel failed to let someone know about the violent shake or make note of the subsequent damage? Did everyone follow launch procedures properly and if so, how did a damaged aircraft get off the deck?

Other issues included our SOP for how and when control wipeouts should be done. All of these are pertinent points that we discussed with our CAG and the ship's crew, subsequently focusing the HAZREP on excessive jet exhaust as the first link in the chain.

The hazards associated with excessive power on the flight deck are well known: Equipment gets damaged, toppled or flight-deck personnel get knocked down or hurt. However, on occasion, a pilot needs to use the throttles to taxi, negotiate a turn, or troubleshoot. In these cases, pilots should control the risks by asking permission from the tower. The Boss and MiniBoss have the best perspective to detect hazards and help mitigate risk to personnel and hardware. Taxi directors and aircrew must also remain vigilant about the consequences of directing and moving aircraft on the flight deck close to other aircraft.

James H. Watson

The second link in the chain was the aircrew. Feeling the shudder, we could have called a troubleshooter to inspect the tail or called the tower since the shudder was, in our experience, larger than normal. Then perhaps we could have detected the damage and stopped the launch. The flight-deck crew didn't notice anything unusual,

continued on page 28

BRAVO Zulu

BZs require an endorsement from the nominating squadron's CO and the appropriate CAG, wing commander or MAG commander. In the case of helo dets, the CO of the ship will suffice. A squadron zapper and a 5-by-7-inch photo of the entire crew should accompany the BZ nomination. Electronically-submitted photos must be at least 300 dpi. Please include a squadron telephone number so we can call with questions.

HMH-461

The crew of Ironhorse 11 had just finished their night mission as part of a squadron combat-readiness evaluation and was tanking from a KC-130 as they headed back to MCAS New River. Eighteen Marines from Fox Company 2/2, who had also participated in the exercise, were in the cabin. Ironhorse 11 was the second helicopter of the section and was plugging off the right hose. After taking on the fuel they needed for the trip home, the crew continued practice plugging with the tanker at 5,000 feet.

In the cabin, the crew chief, Sgt. Bruce, noticed a flicker on the edge of his night-vision goggles. He turned his head to get a better look and saw a cabin fire in the soundproofing. The fire was right above the embarked Marines and was quickly spreading, spewing thick, black smoke.

The helo crew reacted. Sgt. Bruce reported the fire and helped the Marines unstrap. Cpl. Bell (the second crew chief) grabbed the nearest fire extinguisher. The HAC, Capt. Wingo, made an emergency breakaway, then descended as he called his lead and the tanker. Capt. Swicegood (the copilot) retracted the probe, went through the landing checklist, and switched the transponder to emergency squawk.

During the descent, the cabin crew used fire extinguishers to put out the fire before taking their normal positions by the windows to call the landing.

Capt. Swicegood completed the immediate-action items and backed up Capt. Wingo on the near-autorotative descent.

The HAC chose an open, unlit field and landed. The crew began a normal shutdown, while Sgt. Bruce evacuated the 18 Marines out the ramp.

Postflight revealed that a plastic tie-tie on a wire bundle was not secured to the bulkhead and was resting on a fuel line. Over time, the tie-tie weakened the fuel line and created a pinhole leak, which quickly expanded, causing the fuel to spray on the bulkhead and soundproofing. The soundproofing section was destroyed, along with a seat the embarked Marines were using. Because of the crew's quick actions, however, none of the Marines was injured and damage to the helicopter was minimal.

Cpl. Joseph Bell
Sgt. Delray Bruce
Capt. David Swicegood
Capt. Carl Wingo

Lt. Todd Glasser
AW3 Todd Widdifield
Lt. Rich Reinauer

The crew of Hellfire 01 had launched from the USS *Chancellorsville* (CG 62) on a day-to-night SSC mission. Thirty minutes into the flight, they saw the No. 2 hydraulic reservoir's low-light. The aircraft's leak-detection and isolation system shut down the equipment associated with the No. 2 hydraulic pump, including the hydraulic boost to the flight controls.

The nearest divert field was more than 80 miles away, and the crew decided to make a small-deck, boost-off landing aboard the *Chancellorsville*.

The HAC (Lt. Reinauer) and his copilot (Lt. Glasser) worked together to control the helicopter, while AW3 Widdifield, the aircrewman, gave the pilots vectors and closure calls for a self-contained approach and landing.

HSL-51, Det 4

Lt. Michael T. Amos

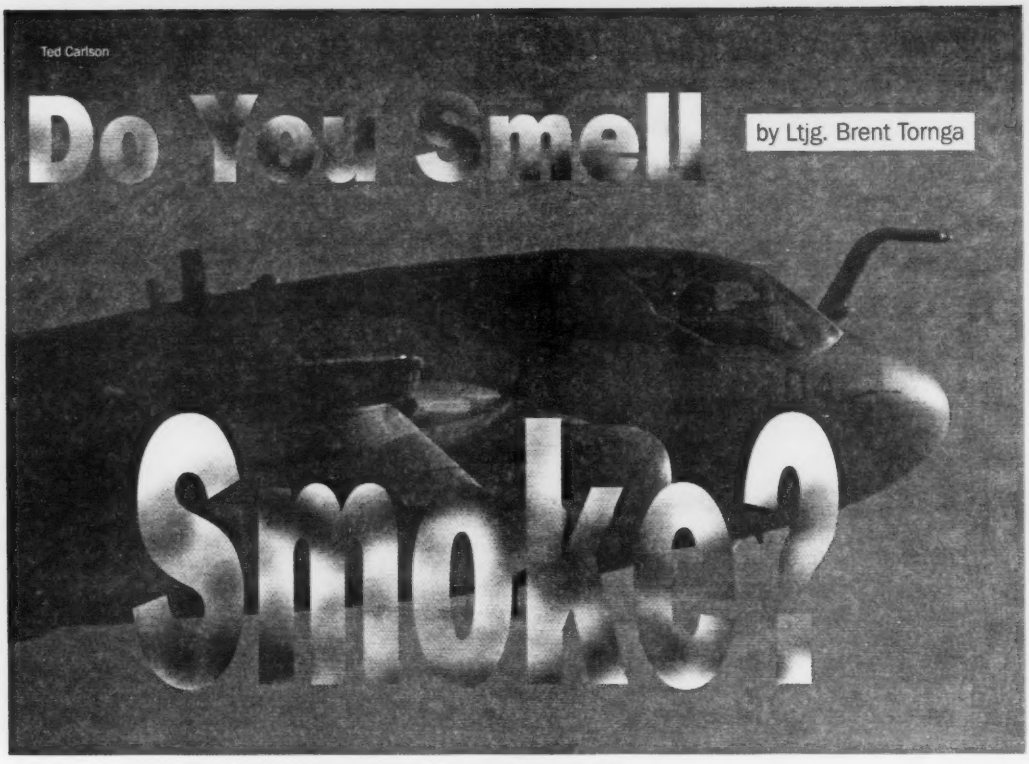
While deployed aboard USS *John F. Kennedy* (CV 67) in the Red Sea, Lt. Amos launched on an FCF. As part of the profile, he had to separately shut down and restart each of his Hornet's engines. He completed the shutdown checks for the left engine, then restarted it. As he shut down the right engine, its hydraulic pressure decreased normally. However, Lt. Amos saw that the left engine's hydraulic pressure was also decreasing rapidly.

A complete loss of hydraulic pressure makes the FA-18's flight controls fail, which would have resulted in the loss of this aircraft.

With seconds before the Hornet became uncontrollable, Lt. Amos restarted the right engine, restoring hydraulic pressure to the aircraft.

Postflight inspection indicated the left engine's hydraulic pump had failed.

VFA-82



Do You Smell Smoke?

by Ltjg. Brent Tornga

A COUPLE SECONDS ELAPSED BEFORE WE HEARD A SNAP.

My EA-6B squadron was on its first leg of a Westpac cruise and had been operating in Japanese airspace for about three weeks. Just a few days before going on cruise, we had been rerouted to Japan because of tension on the Korean peninsula. We needed a "shotgun" plan to transfer our four EA-6Bs, support gear, and personnel to Japan over a few short days. So goes the schedule of a "national asset."

Our counterparts in the air wing deployed on schedule aboard the carrier and slowly headed our way. We joined them during the port visit to Pusan, South Korea, after three weeks of operating out of MCAS Iwakuni.

The weather in and around Japan in late June was hazy, wet and humid. We rarely had a CAVU day of flight operations. One afternoon, my regular crew was scheduled to fly one of the low-level training routes in northern Japan. We prepared the charts and briefed the route and flight, discussing ORM issues at the end of the brief.

Our weather brief didn't give us the warm and fuzzy we wanted for the route. However, it was forecast to slowly improve over the next couple of hours. That synopsis quickly lost all credibility as we manned up because the carrier was steaming through heavy rain and gusty winds. The aircrew wasted no time preflighting and strapping into the aircraft to minimize moisture in the cockpit. Unfortunately, our crew had to hot-seat into an aircraft that had just landed on the previous cycle.

Hot-seats in the Prowler are painful because each motor must be secured and restarted separately as each front-seat

crewman is swapped out. Making matters worse was the fact that our troubleshooters had to repair a problem in the annunciator panel before the hot-seat. After 20 minutes, quite a bit of rain had entered the cockpit, and we were soaked.

As we finished manning up, the weather toward our route entry in the west appeared to be breaking up. Sitting in ECMO 1's seat, I noticed that the INS alignment was coming along fine, but our GPS was not working. Visible moisture was everywhere, and the two backseaters said, "Try to keep the flaperon rolls to a minimum. We have a lake on the floorboards back here!"

We went through our normal pre-takeoff checks and taxied to the catapult. We launched and climbed away from the boat. On the climbout, the INS dumped, and I was desperate to get some semblance of a navigation system. We had a good inertial-attitude platform but no horizontal solution for groundspeed or groundtrack. With the entry point to our low-level too far away to pick up on TACAN or radar, and no INS or GPS navigation, we decided to cancel the low-level and stay close to the boat.

We told Strike and were soon tasked with doing the old standby mission—surface search (SSC). We rolled up the SSC control frequency and got an area for search. We detected and prosecuted several contacts, which we passed to the controller aboard the boat. About 15 minutes before the end of the cycle, we were prosecuting our final contact when the pilot and I looked at each other and simultaneously asked, "Do you smell smoke?"

A couple seconds elapsed before we heard a snap. The pilot saw an attitude failure on his primary display as I noticed a circuit breaker pop on the forward main circuit-breaker panel.

He quickly ordered, "Reset the breaker at once."

As I turned to my left to reset the circuit breaker, I saw several other popped CBs. In the Prowler, NATOPS says multiple popped circuit breakers indicate greater problems. Following our training, we decided not to reset any of the circuit breakers.

Immediately, we started analyzing what had happened and what we had left in the aircraft in terms of instruments. Our biggest concern was losing our primary and secondary attitude sources. We did have the standby gyro, but that was supposed to only last a few minutes with an electrical failure. As such, flying the jet and remaining VFR were the immediate concerns. We stayed below the cloud deck to keep the horizon in view, but with night rapidly approaching, we knew we had to recover soon, or we'd be in big trouble.

We determined that we had a significant power failure or electrical fire because of the smoke and the loss of a number of aircraft systems. Attitude reference and navigational systems failed, and we'd lost all IFF systems. In addition, circuit breakers popped for the right engine-fire light and engine bleed-air valves. What we couldn't figure out was why some of these systems were no longer available when they were not associated with any of the popped circuit breakers.

While the pilot tried to remain below the clouds, our crew discussed our options and decided on a game plan. We decided to run the electrical-fire checklist from the PCL and contact a Prowler representative on the boat. The rep decided to launch a tanker to escort us and check our landing configuration. The rep backed us up with circuit-breaker nomenclature, electrical-systems diagrams, and back-up bingo numbers in several aircraft configurations. His calm, cool voice reassured us we were heading in the right direction. We were just thankful that we hadn't lost our radios, too.

With the sunlight dimming and the weather just clear enough to remain VFR below a low layer, we set up for a long straight-in. With only a few flight instruments, mainly pitot-static, we began our no-

continued on page 29

I Can't Stop This Thing,

or Aim for the Guy in the Tractor!

by Lt. Benjamin Cook

It was shaping up to be another great day in the Persian Gulf. I was starting my second week of operational flying and was getting comfortable with flying around the ship—at least during the day. Because I was not flying with my normal crew, I made sure the brief was especially thorough, including what I wanted to hear from them at points throughout the flight, and what they could expect to hear from me. I did not belabor any of the carrier emergencies, but I covered them in the same detail that I always did.

We suited up and walked to the aircraft an hour before launch to allow plenty of time for a thorough preflight and to troubleshoot. During the preflight, I noticed a moderate amount of hydraulic fluid in the port wheelwell. I called the plane captain over. He told me the fluid came from over-servicing the hydraulic system, and the jet was good to go.

We manned up and started the jet without any problems. The checklists and plane-captain checks went fine, and before I knew it, we had pulled chocks, armed the seats, and were taxiing toward cat 1.

As we taxied, I got two good brake checks (one for the normal system, and one for the emergency system.) When we passed the JBD, we got the signal to spread the wings. I taxied just a bit forward, then stopped and waited for the wings to come down so we could finish the takeoff checks. I was looking out the port side at my wing when my COTAC tried to stow the gust lock and lock the wings in place. I heard him exclaim something that made me think something was not right.

By the time I had looked back inside, he had already pulled the gust lock back up. There were no abnormal indications. When I asked what had happened, he said the No.1 hydraulic system's pressure had dropped to zero when he tried to lock the wings down. We decided to try once more, and this time I watched as the pressure gauge dropped toward zero, and the hyd pressure light came on.

When we raised the gust lock, all indications returned to normal. We decided that we were down, and signaled to the flight deck that we needed to be spun off the cat. When we tried folding the wings, they began to ratchet and the hyd pressure on the No. 1 system moved around a bit.

We then signaled for the wings to be folded externally. I watched one of the flight-deck crew go around to my port wheelwell, then the deck crew folded the wings from the outside. All caution lights went out, and everything appeared normal in the cockpit.

Our yellowshirt signaled we were going to taxi forward then spin off the cat. We proceeded forward, then did a tight 180 on the bow of the ship, and taxied back down cat 1, toward the island. As we passed the spot on the cat where we were sitting when we tried to spread the wings, both my COTAC and I noticed quite a lot of fluid on the deck. About the same time, my skipper, who happened to be sitting in one of the jets waiting to go off cat 1, asked us how our brakes felt. In our cockpit, we did another quick check, noticed that our emergency brake accumulator was still fully charged, and our No. 1 hyd system was still working.

"Everything seems OK," I replied, right about the time they stopped us by elevator 1. From the signals I was getting from our yellowshirt, I gathered we were going to be pushed back onto the elevator and out of the way.

While we were sitting there, holding the brakes, my worst nightmare happened: The brakes failed. Suddenly, my feet were flat on the deck. I tried pumping them once, felt no resistance, and threw the hook down. At this point, I experienced time compression. I remember switching to the emergency system, and at the same time telling my crew we had lost the brakes.

My COTAC immediately reported we had lost brakes over tower freq. By the time he had finished his transmission, I was already looking for something to run into. The deck crew had not noticed my hook was down, and instead of doing what I had always been led to believe–that they would throw everything they had at your aircraft, possibly including a blueshirt—the crew was moving my first target (a towbar) out of harm's way. But by now, the yellowshirt who had been directing me, had figured out what was going on and began signaling me to follow his directions. My COTAC shouted for me to follow him and turn to the right.

To this day, I don't know how we managed to squeeze between an E-2 that was turning and a Hornet, but somehow we made a hard right and headed toward the landing area.

Just as we started to come out of the turn, I got the shock of my life: the Tomcat that was hot on cat 3 got shot right in front of us. When we got out into the landing area, I jinked around the hole where the catapult talkers sit. I was aiming for the JBD that was still up from the Tomcat's launch. Of course, that would have been too easy. It retracted before I could get to it. Oh yeah, by now we were picking up quite a bit of speed. After all, both engines were turning, and there was a lot of wind over the deck. All I could do was look down the deck for my next target of opportunity, a tractor towing an FA-18.

I steered my S-3 right for that piece of yellow gear, all the time yelling to the driver to bail out—as if he could hear me. His thought was to save the Hornet he was towing, so he began to back up, and I just adjusted my turn to keep tracking right at him.

Just as I thought I was finally going to hit something and come to a stop, the jet began to slow and came to a complete stop. Remember how I dropped the hook? Well, it worked fine, engaging the 4-wire in reverse. I stopped less than 5 feet away from the tractor and its lucky airman-driver. The deck crew chocked and chained my jet, and we shut down, but not before I proceeded to dump what little hydraulic fluid I had left in my system into the landing area.

We handled this emergency exactly as briefed. Everyone has his own way of briefing, but most people usually say the same thing. My crew's actions had no surprises; the biggest surprise was the actions of the deck crew. Obviously, you can't count on them to know exactly when you lose your brakes (they can't all see your hook), so don't expect them to be throwing everything they are carrying to stop you. I never dreamed that I would have a yellowshirt sprinting ahead of me to help direct me through the maze of the flight deck.

To this day, nobody can say why I had nosewheel steering but no brakes. I had lost all the fluid in my No. 1 system and should have lost all my utility systems, including brakes and nosewheel steering.

Lt. Cook flies with VS-21.

When Feathered Friends Become Feathered Foes

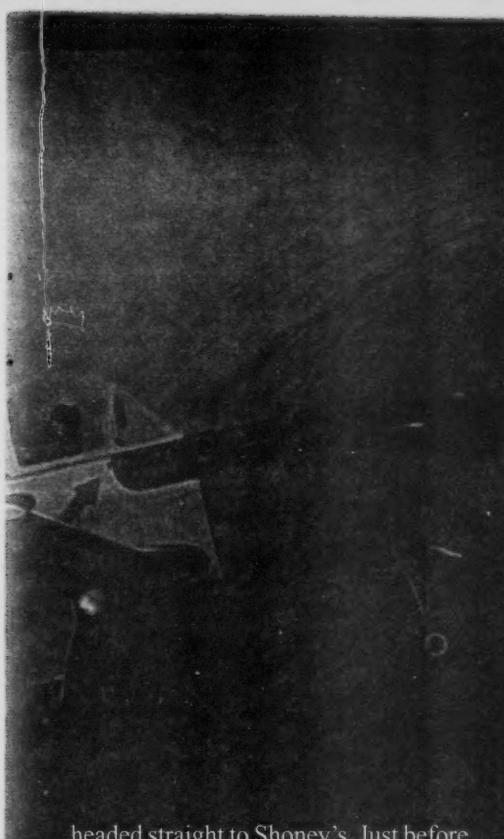
by Capt. Mike Lakin

"So, where do you want to go for this out-and-in?" What a great question to ask a naval aviator. As a T-34C flight instructor, the entire United States is my canvas and visual navigation is my brush. A typical day as a VNAV instructor and squadron stage leader can allow for flights up to 1,200 miles away from home, but the typical out-and-in usually consists of a 200-to-400 mile leg, a stop at a first-class FBO, and a nice relaxing ride home. No two VNAV hops are ever the same as my story will tell.

"Let's go to Fulton County-Brown Field up in Atlanta," I said when my student, one of our IPs getting an upgrade qual, called. "They have a decent restaurant, and if we break down we are at a Raytheon service center." (Raytheon is our contract-maintenance provider.) T-34s generally don't break down, but because I'm a helo pilot by trade, I'm always a little pessimistic about the aircraft.

Going into the Atlanta Class–Bravo airspace, VFR, at 200 knots and 1,500 feet AGL, is no easy task. You would have thought we were planning a strike mission as we prepped up our VFR sectionals, terminal-area charts, jet cards and navigation logs. We briefed the entire route looking for obstacles, altitudes, and any hidden airspace or restricted areas on the chart. We picked our checkpoints with the greatest of care.

Our flight into Atlanta was fine. Nothing beats a good VNAV! If two Marine helo drivers can't make it to Atlanta during the day using a chart and compass, they should be sent back to the Basic School for remedial land navigation. We landed, fueled the plane, and



headed straight to Shoney's. Just before entering the crew van, we changed the visors on our fixed-wing helmets. After filling up on the all-you-can-eat buffet and discussing world events, we took off on the night leg back to Whiting Field.

I took the controls so my student could concentrate on navigation. I climbed from 2,500 feet to 4,500 feet. Our minimum night altitude is 2,500 feet, but I stepped up so we could activate our VFR flight plan with the FSS. A full moon rode high in the clear, dark sky. As I was looking down at the chart, we heard a loud thump, then the sound of rushing wind. I spit out a few feathers that had been blown into my mouth. Keeping my head down, I glanced at the engine instruments and rolled my eyes forward into the darkness. Although we were still flying, I expected the rest of the windscreen to cave in at any moment.

"Hey, you OK?" I heard over the ICS as I pulled up into a steep climb. I told the student to find us the nearest field as I checked the controllability and condition of the aircraft.

I saw a hole in the top of the windscreen with jagged plexiglas hanging in the wind. The rest of the canopy was fine and the aircraft flew well. We both wanted to cruise home with our wounded bird, knowing this would be a long evolution once on deck. However, NATOPS and good headwork prevailed, and we looked for the nearest paved field.

Our closest choice was Chambers Airport, a 3,100-foot, uncontrolled field that looked small and in the middle of nowhere. Our other choice was Callaway Airport near La Grange, Ga. "ZZ Top" rang through my head as I made a call on the VHF radio to their unicom. A couple of civilians were inbound and stayed out of our way until we completed our precautionary emergency landing.

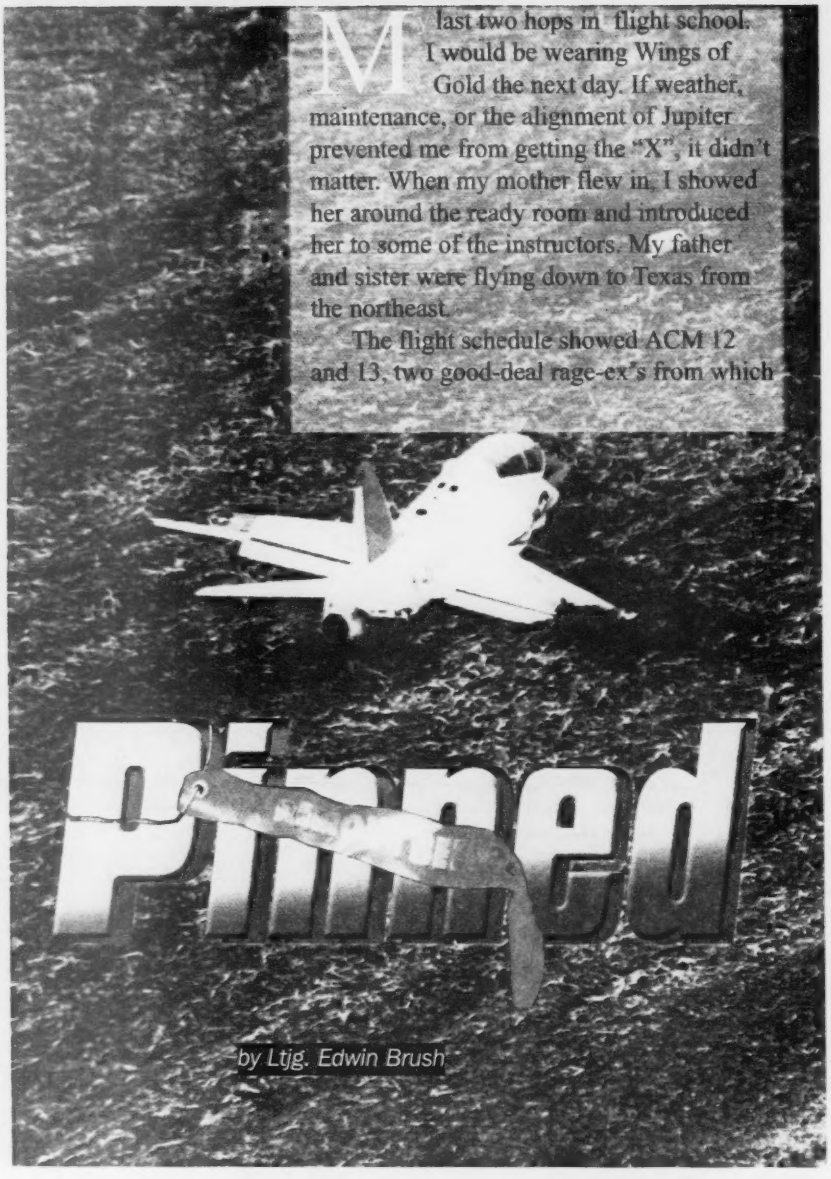
We examined our damaged aircraft. A medium-sized bird had slammed into the windscreen just to the right of the OAT gauge, and then glanced off into the night. The result was a softball-sized hole with some loose fragments of plexiglas scattered throughout the cockpit. Part of the bird ended up on the backseater's map. I had two small cuts on my chin from the exploding plexiglas, and a few scratches on my clear visor.

Forty-eight hours and a new windshield later, we headed home. As luck would have it, seven days later I smacked into another bird at night on a VNAV hop. This time, my student was in the front seat. The windshield was left intact, and we suffered only minor damage to the metal frame.

These incidents were unusual. Most bird strikes occur during the day, at altitudes generally below 1,000 feet, and usually the bird doesn't go through the windshield. The peak migration seasons—spring and fall—obviously present a greater risk. The best prevention is to keep your eyes out of the cockpit and in front of the aircraft.

Capt. Lakin flies with VT-2.

For BASH information, contact Lt. Rocky Thompson at the Naval Safety Center, 757-444-3520, ext 7281 DSN 564 Email: rthompson@ safetycenter.navy.mil.–Ed.



My last two hops in flight school. I would be wearing Wings of Gold the next day. If weather, maintenance, or the alignment of Jupiter prevented me from getting the "X", it didn't matter. When my mother flew in, I showed her around the ready room and introduced her to some of the instructors. My father and sister were flying down to Texas from the northeast.

The flight schedule showed ACM 12 and 13, two good-deal rage-ex's from which every student returned smiling from ear to ear. After the last flight would come the traditional dousing of water, then the icing on the cake when the CO or another available instructor rips off your student patch and gingerly places "soft wings" on your chest. The anticipation was incredible.

When I approached the jet for preflight, the plane captain was someone I had never seen. He seemed rushed and many of the pins were still in the jet, which was unusual. I was trying to approach the day slowly and more meticulously than usual. I wanted to be disciplined, take pride in my habit patterns and demonstrate all I had learned.

On my first takeoff out of Kingsville, I lined up on the runway as Dash 3. I watched as the lead and Dash 2 (flown by two instructors) let go of the brakes and sped off in section down the runway. I remember seeing the dried grass standing straight up along the edge of the runway and hearing the no-winds call from tower. Ten seconds later, I released my brakes and the plane accelerated.

As I tracked down the right side of the runway, everything felt normal. Suddenly, the aircraft swerved to the right, so I countered with rudder, making the aircraft swerve left centerline. A glance at airspeed showed the aircraft accelerating through 100 knots.

"I'm going flying," I thought. Though rotation speed was 120 knots, I believed it is much easier to go from 100 to 120 than 100 to zero.

After a few more lateral excursions, I got airborne. I came up with several reasons why the plane might swerve, including pilot-induced oscillation, weather or jet wash from my lead. I couldn't tell if there was truly a problem with my jet, so I said nothing. Besides, I needed to compartmentalize and fly a good rendezvous.

Our flight in the area went well. As we approached NALF Orange Grove, I felt a little doubt gnawing at my soul. I remember ATIS telling me there was no arresting gear on the active runway. No problem. If the jet swerved after touchdown, I'd simply take off again, set up for a downwind to the other runway and take a trap there. I still didn't say anything to the lead. After all, it was way too late to tell him now, because his first question would be, "Why didn't you tell me sooner?"

My lead landed and rolled out on his side of the runway. I touched down, expecting the worst, ready to move the throttles to military thrust. Ever suspicious as I slowed through

100 knots, I was ready for the worst, but nothing happened. As I cleared the runway, I tried to set up the cockpit for the next flight and stay ahead of the game. I dismissed the takeoff as something I must have caused.

We debriefed over breakfast and briefed for the next flight, where I would be the fighter lead. Yet another missed chance to tell the instructors about my first takeoff. I walked out to the jet, preflighted, strapped in, started up, ran through my takeoff checks, and taxied out to the hold-short.

This time, I was Dash 2 of the section takeoff. I was on the right and lead was on the left. Dash 3 held at the hold short. Again, no winds. I remember the lead's signal to run up the engines. We both went to military thrust. When his arm fell beneath the canopy rail in a karate chop, we released the brakes and started the takeoff roll.

I looked down the front of his wingline (the formation-bearing line) staying in position by pulling a little power off, anticipating my jet having more power than his. I glanced down the runway a few times to check drift, but my primary scan was the bearing line.

Many things happened faster than it takes to read this paragraph. I felt a side-to-side motion like a car taking a corner. There was a quick movement away from lead and another one even more pronounced back toward him. My perspective on the lead's jet changed. It wasn't off my left shoulder anymore but much farther forward on my canopy. The jet felt fast as I pulled back on the stick. Take off! Get away or over them. I remember seeing the instructor in the back seat of lead's jet looking up and ducking as I flew above him, I lost sight of him as lead's plane passed under the nose of my jet. I felt a thud and saw the lead's plane disappear to the left out of sight.

I was in the air, but it wasn't going to be for long. I felt like I was sitting much too far back in the seat and the angle of attack was way too high. Adverse-yaw departure coming. Get out now. I pulled the handle with both hands, looking right down at the handle (that would have been good for my neck). The next instant, the jet was on its side, still airborne, but in a steep bank. I heard, "Eject! Eject! Eject!" over the radio. It vindicated my thought process. I looked down at the handle as the jet somehow touched down upright. I didn't feel it land in the soft mud, but I did feel it accelerating along in the dirt, and I yanked the throttle off. I tried to keep it tracking straight through the mud.

This time, I tilted my head up and pulled the ejection handle. Still nothing. The aircraft began to slow considerably, yet it still swerved one more time. This time, a wingtip dug in, and I actually was looking up at dirt blow by the canopy. Later, I heard the jet was actually inverted flying backward for an instant.

The jet cartwheeled, coming to rest upright, pointed right back to the place where I had begun my takeoff roll, except it was now several hundred feet off the left side of the runway. I jumped out of the jet as quickly as possible and ran toward the other jet, wondering if I had just killed two people, not quite believing what had happened.

The aircrew in the other jet were fine, and the other aircraft sustained only Class C damage.

The aircrew in the other jet were fine, and the other aircraft sustained only Class C damage. We all miraculously walked away without a scratch. I had pulled the ejection handle twice, hard. I should have ejected

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Arms Too Short, Sir?

by Cdr. Gary Tanner

As a squadron flight surgeon in the '80s, I remember the day my XO failed his vision test during his annual flight physical. While I was away on leave, he called me in a panic concerned that he was "going blind." He said he'd been referred to the optometry department for evaluation because of his 20/50 near-vision. No one had explained to him about the "birthday diseases," those normal processes everyone experiences if they celebrate enough birthdays.

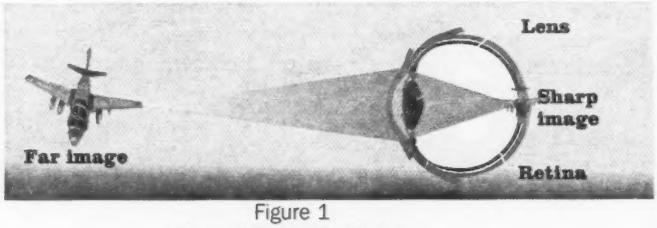

Figure 1
Normal Distance Vision

The eye has a lens that sharply focuses light on the retina in the back of the eye (Figure 1). An elastic, pliable lens is required to change your focus from your wingman to your kneeboard. As we age, the lens of our eye becomes less elastic and less able to focus on items that are closer than arm's length (Figure 2). The ability to focus on near objects is known as accommodation and is greatest in childhood but diminishes as we age.

When the nearest point one can see clearly moves beyond a comfortable reading distance, the condition is termed "presbyopia," literally, "old eye." This process usually begins in a person's early 40s but may occur earlier in those who are farsighted, like many of our aviators. Many aviators aren't aware of this progressive condition until their annual physical, because their gauges and kneeboard are still far enough from their eyes to focus on without difficulty, and the near-vision test happens to be closer than they usually read. As objects are brought within approximately 1 meter from our eyes, the lens has to bend the light more to get the image to focus sharply on the retina in the back of our eyes. The lens accommodates by increasing the convexity of the lens, which increases the degree to which the light is "bent" or refracted. The closer the object to the eye, the more the light rays have to be refracted for the object to be seen sharply. Your lens must become more and more convex. The ability to do this is greatest in the very young and diminishes gradually with age.

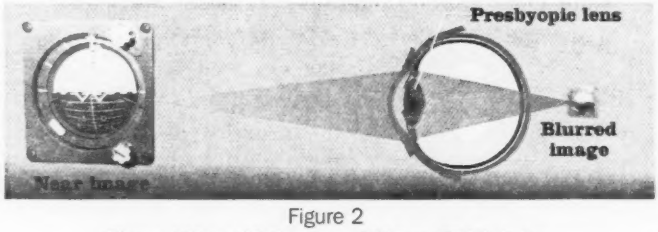

Figure 2
Blurred Near–Vision in a 45-Year-Old Aviator

You can demonstrate this phenomenon by having your 10-year-old son show you how close he can hold the paper to his nose and still read it. Compare his distance to that of your 35-year-old spouse.

To correct this situation, you have to place a lens in front of the eye to increase the "bend" of the light rays so they will focus sharply on the retina (Figure 3). The common corrective measure is "cheaters"–convex lenses. The strength of the lens determines the distance at which objects are in sharp focus. When your lens was

As you age, the elasticity of the lens continues to wane...

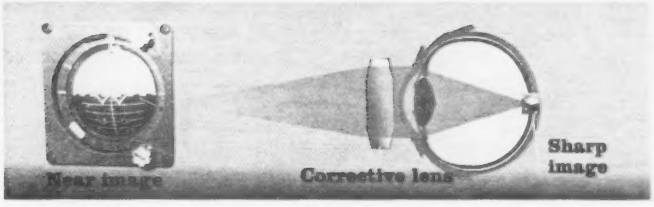

Figure 3
Near Vision Corrected with Glasses

fully elastic, it became thicker and thinner as you desired to focus on near and far objects. Now the cheater lens determines the distance at which you can see clearly at near distances. Remember, the lens is no longer able to focus in and out at will. When this condition first strikes, you will only need minimal correction and will still have some lens elasticity, so you may be able to read both your kneeboard and gauges with just one lens power. Older aviators and farsighted aviators may require trifocals (Figure 4), which have two sets of near–vision refractive glass to focus on intermediate and near distances.

As you age, the elasticity of the lens continues to wane so you need stronger glasses for near–vision every three to five years until you are in your mid- to late-60s. The strength of the lens is determined by your individual needs. If your arms are too short to read your NATOPS comfortably, then you need a stronger lens. If you have to put your nose near the stick to see your kneeboard with your glasses on, I suggest weaker lenses.

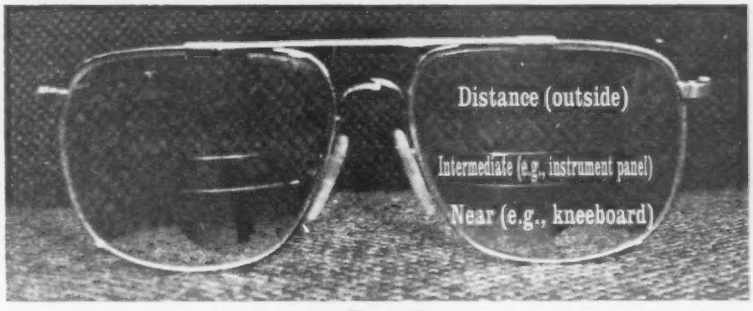

Figure 4
Trifocal eyeglasses

Unfortunately, the glasses that assist your near vision will blur your distance vision. That is why most people opt for bifocals that have a distance correction in the top half of the glasses and a near correction in the lower half. If no distance correction is necessary, then the top half can be clear or you can choose the professorial look with "half eyes" or "granny glasses."

Some contact lenses are manufactured as bifocals, but they are a compromise. Most people can't see a crisp 20/20 at near or far distances with our current generation of bifocal contact lenses.

Refractive surgery (PRK, or photorefractive keratectomy) is an option for the very few. Those who are farsighted and prematurely presbyopic (in their late 30s) may indeed be candidates for this procedure but not most aviators. Remember, the problem isn't with the refractive state of the eye; it is with an aging lens. There are some new refractive procedures coming that may help with this situation, but it will be several years before they are available to aviators.

Back to the story I began this article with. We put the XO in the cockpit and measured the distance from his eyes to his kneeboard, then to the gauges. When he went for his eye evaluation and glasses prescription, he told the doc exactly what near distances he needed to be able to see clearly. He ended up with trifocals to see two separate sets–his kneeboard and gauges –clearly.

Since your personal needs and activities determine the correct strength of glasses, measuring the distances you need to see in the cockpit is by far the best way to prevent owning a helmet bag full of different glasses.

As you find your arms growing shorter, don't panic. There is a solution as near as the closest medical facility.

Cdr. Tanner is the Naval Safety Center's assistant flight surgeon and a board-certified ophthalmologist.

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either. There were a lot of new float–coats working the deck, concentrating on getting aircraft gassed up and ready to launch.

Although many of these folks were working the flight deck for the first time, there were other people with enough experience to sense when things weren't normal. They, too, could have alerted the FDC when the aircraft was buffeted by the exhaust. That could have broken the chain.

The last link was the final checkers. During a launch, our final checkers routinely verify the wings are spread and locked, the ailerons work, the engine nacelles were clean, and the panels secure. Walking aft along the fuselage, they look over the tail section and then walk back forward before positioning themselves outboard of the engine and slightly aft of the wing line. In this particular case, the final checker obviously didn't notice the damaged rudder tab.

Feeling pressure to get the aircraft launched and with little more than 15 seconds to complete all their checks, it's not surprising they missed the damage. The final-check process is a vital step in the larger picture of launching aircraft and cannot be abbreviated. If we had taken another five or ten seconds before we launched (hardly a catastrophic delay to the deck cycle during CQ), our aircraft would not have left the deck.

Review your procedures and how your folks are doing their jobs. If something doesn't seem right, speak up. We will never be able to eliminate the risks of the flight deck, but if we practice our ABCs in and around the carrier, we will avoid Class A, B, or C mishaps.

LCdr. Lee flies with VAW-113.

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gyro approach with no other back-up systems to indicate our position from the boat.

The final controller, then paddles brought us down using the radio with the standard no-gyro comm drill.

"Begin right turn...stop turn." Then, "You're a little high. Now begin left turn...stop turn."

Picking up the meatball at three-quarters of a mile was a welcome sight for this drained crew. With several "sugar" calls from paddles, my pilot flew an OK pass to get us and our wounded jet back aboard. We were all shaken by the "what ifs" of the last hour, but as a junior crew, we felt we had done a good job. We all paused a second before securing our engines, thankful we were safely aboard the boat.

After several debriefs and hours of exploring why the problems occurred, we made several determinations. First, our maintenance technicians reported the forward circuit-breaker panel's cannon plug had been saturated with water, causing a short and fusing some pins within the connector, which is why several circuit breakers popped. This also triggered a phase-A power circuit breaker to pop in the left shoulder panel, an area not accessible from the cockpit. Phase-A power goes to the forward main circuit-breaker panel and the forward right circuit-breaker panel. When phase-A power to these two panels was disrupted, all systems on these circuits requiring phase-A power were lost, which explained why several systems failed that were not associated with the popped CBs. Rain in the cockpit significantly contributed to the electrical problems, and we should have dried out before flight.

We dodged a huge bullet on this one. Our predicament at night or during IMC would have been a lot uglier. The fact that our fire and smoke quickly subsided was a testament to the design of the circuit-breaker panel. Historically, we rarely lose primary and secondary attitude references at the same time, but this time, we did. If it happens to you, get your priorities straight right away and develop a solid game plan.

Ted Carlson

Other than the "water is bad for the cockpit" lesson, we also learned a few things about crew coordination and the value of a good squadron rep. Make sure you always tell the ship what's happening, including the LSOs. You never can be too sure if the correct info was passed to the LSO platform and the guys that are going to keep you off the ramp. Knowing that we were in distress, the people on the boat did everything they could to get us aboard.

Ltjg. Tornga flies with VAQ-131.

Sorry, Admiral, We've Got To Hold

by Lt. Tim McDougall

AMH1 Edgar Woods

We were returning to Offutt AFB, flying a typical February weather divert in support of the Airborne Command Post mission. This mission involves flying a 14-member Navy crew and an eight-person joint-service battle staff, including one flag officer (critical element number 1). Critical element number 2 was the fact that Offutt has only one runway. In February, when runway conditions range from wet to icy, the E-6 can't land with a large crosswind.

We arrived in the vicinity of the field at 1100 local time. The RCR was 8, and crosswinds were 10 to 20 knots, well outside our limit. Our Dash-1 weather brief said the RCR would remain at 8, but that the crosswind would diminish and be within limits by 1300 local. The controller told us to stay in the area and try to land by 1400; otherwise, we would have to divert to Tinker for fuel and return.

The flag officer flying with us had a plane to catch for another meeting in a couple of hours. Can you guess where this is going? As he strapped into the jump seat to get a better view, ATIS called RCR at 12 and winds within limits. We started the ILS approach to runway 30. Everyone was happy until short final when the tower called winds out of limits. We went around for another try.

After the second go-round, the flag—a non-aviator—asked me if tower knew our crosswind limits. I replied I didn't want to tell tower our limits because I didn't want to pressure the controllers into giving me a more favorable reading if it wasn't actually there.

"Does that mean 'no'?" he snapped.

"No, sir," I said.

We climbed out and delayed in the area. I apologized for the delay, but the crosswinds were out of limits. The admiral didn't respond and quickly left the flight deck.

After a short wait, Metro called the runway dry, and we headed back for another try. We landed, and the admiral left as soon as engines 1 and 2 were shut down. I don't know if he made his commercial flight–it would have been close.

We discussed the situation at the debrief, and we all felt that the flag officer was not simply asking if tower knew our crosswind limits for the controller's general knowledge. While we were never directed to do anything unsafe, the perceived pressure was real and could have easily contributed to our making a bad decision. The weather improved enough for us to land.

I don't know what the admiral would have done if conditions had not gotten better. Officers with stars on their shoulders have hectic schedules that are important, but not important enough to risk aircraft and crew. NATOPS provides limits for a reason. As an aircraft commander, stick to your guns when it comes to safety of flight. Although our admiral wasn't happy about the delay, I hope he appreciated the reason.

Lt. McDougall flies with VQ-3

Milestones

Command	Date	Hours	Years
VMA-223	01/12/00	40,000	9.9
VP-47	03/14/00	165,200	27.0
HMM-262	03/20/00	10,000	2.9
VF-14	03/23/00	18,700	5.0
HM-15	04/21/00	25,000	8.0
VFA-113	05/12/00	112,000	26.0
HS-7	05/28/00	5,700	2.0
VR-54	06/01/00	29,800	9.0
VP-45	06/02/00	203,000	31.0
VFA-195	06/03/00	75,800	18.0
VS-21	06/05/00	40,600	12.0

Class A Flight-Mishap Rate

	FY 00 (thru 5/31/00)		FY 99(thru 5/31/99)	
COMMAND	No.	RATE	No.	RATE
NAVY/MARINE	19	2.00	11	1.09
ALL NAVY	12	1.67	4	0.52
ALL MARINE	7	3.05	7	2.88
NAVAIRLANT	4	2.19	2	0.98
NAVAIRPAC	1	0.52	1	0.47
MARFORLANT	1	1.34	2	2.31
MARFORPAC	5	4.44	5	4.41
CNATRA	3	1.22	1	0.40
NAVAIRRES	2	2.83	0	0.00
4TH MAW	0	0.00	0	0.00
NAVAIRSYSCOM	1	4.76	0	0.00
NON-TYCOM	11	5.39	0	0.00

Class A Mishaps

Aircraft	Command	Date	Fatalities
MV-22	HMX-1	04/08/00	19

Aircraft struck the ground during an approach.

E-2C	VAW-124	04/14/00	1

Flight-deck crewman was hit by turning prop.

AV-8B	VMA-211	04/15/00	0

Aircraft crashed on bombing range; pilot ejected.

T-34C	VT-6	05/02/00	2

Aircraft crashed during a training flight.

FA-18D	VMFAT-101	05/09/00	0

Aircraft crashed after an in-flight fire during a bombing run; pilots ejected.

E-2C	VAW-116	05/09/00	0

Aircraft struck the ground after a bird strike during FCLP.

T-45A	VT-21	05/13/00	0

Aircraft departed runway on landing rollout.

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parallel to the ground the first time in a horrible body position. The second time, I pulled harder, in a good body position, with wings level, and still nothing happened. The ejection-seat safety pin had never been removed.

When I had climbed into the cockpit in Kingsville, the HUD cover and MDC (mild detonating cord) safety pin had been removed, so I never bothered to look down between my legs. SOP in Kingsville (now changed) had been for plane captains to remove those three items, and for the pilot to be responsible for making sure. I'm thoroughly convinced I would be dead had my first ejection been "successful." Somebody's oversight, rushed procedures, a lack of experience and my own inattention on preflight saved my life.

Interviews with pilots from previous flights in the jet revealed that several had aborted takeoffs in the aircraft because of an unusual shimmy, but only two people had written anything up on the jet. The T-45 is notoriously squirrelly on the runway, which served to mask the problem and convince many people, including me, that the problem was pilot and not machine. The investigation revealed that the nosewheel steering failed at a high speed and collision occurred at 108 knots. My foot was standing on the opposite rudder trying to steer away from the collision to no avail. The board judged I was given a jet with problems, which I didn't have the experience to handle. The result was the loss of a $20-million jet.

Aircrew need to trust their judgement. Follow up on maintenance actions to ensure problems are corrected.

Communication is paramount in this business. If something feels even a little wrong, you need to talk about it with other aircrew and maintainers. Do not doubt your own judgement. If something feels wrong, it is. Aircrew need to be more specific about aircraft discrepancies, and discuss the details surrounding the problem, and freely express the danger if left uncorrected.

Aircrew need to trust their judgement. Follow up on maintenance actions to ensure problems are corrected. While difficult in a place with as many jets as Kingsville, it's still a good skill to learn as a student naval aviator, because you will follow up on maintenance all the time in the fleet.

If you abort a takeoff, or even think about it, it's probably a strong clue your jet has problems. This applies to any flight control or any system. Aborting never seemed to be a good option in the split-second I had to decide, not even with hindsight. By that point, my sight picture of lead was ugly enough, and it was too late.

It would have been a good decision to tell the lead immediately of my problem after my first takeoff. As a student, I feared criticism might follow if nothing was found. I also felt an instructor would have asked, "Well, is it serious?" And I would have truthfully replied, "I don't know."

There are shades of gray and potentially fatal mistakes made in every aviator's career. In retrospect, I wish I had erred to caution. If you don't down the aircraft for yourself, do it for the guy after you.

Sometimes something you do say can be as dangerous as something you don't say. The aircrew of the jet at the hold-short saw my plight and told me to eject. An absolutely correct call for a student, and it did give me a warm fuzzy. The aircrew in the lead jet, however, which I had hit and pushed off the runway, were trying to control their plane. With their jet slowing and upright, they talked quickly in the cockpit and stuck with it, but they were

tempted to punch out when they heard that call.

Ejection commands need to be made when the time comes, but they need to be prefaced with a callsign or a description to prevent inadvertent, needless, and possibly deadly, ejections.

Although it might seem otherwise, getting the "X" wasn't the issue for me. I knew I would be wearing wings the next day regardless of whether or not I flew that day. However, outside distractions and changes in my normal routine could have contributed to my own lapses now so evident. Family and friends coming to town, ensuring my choker was ready, wondering where I was going in the fleet, the rush of ceremony, water buckets, impending life changes and pride could have kept me from focusing exclusively on the business at hand.

A few changes came out of my accident. Jets with the same lot nosewheel were modified to correct the problem I had encountered. Also, pilots now pull the pins in the cockpit of the T-45. The pins are connected by a wire, making them pilot-proof. It's the people who ride the ejection seat who should pull the pins. Small changes have saved lives in the past.

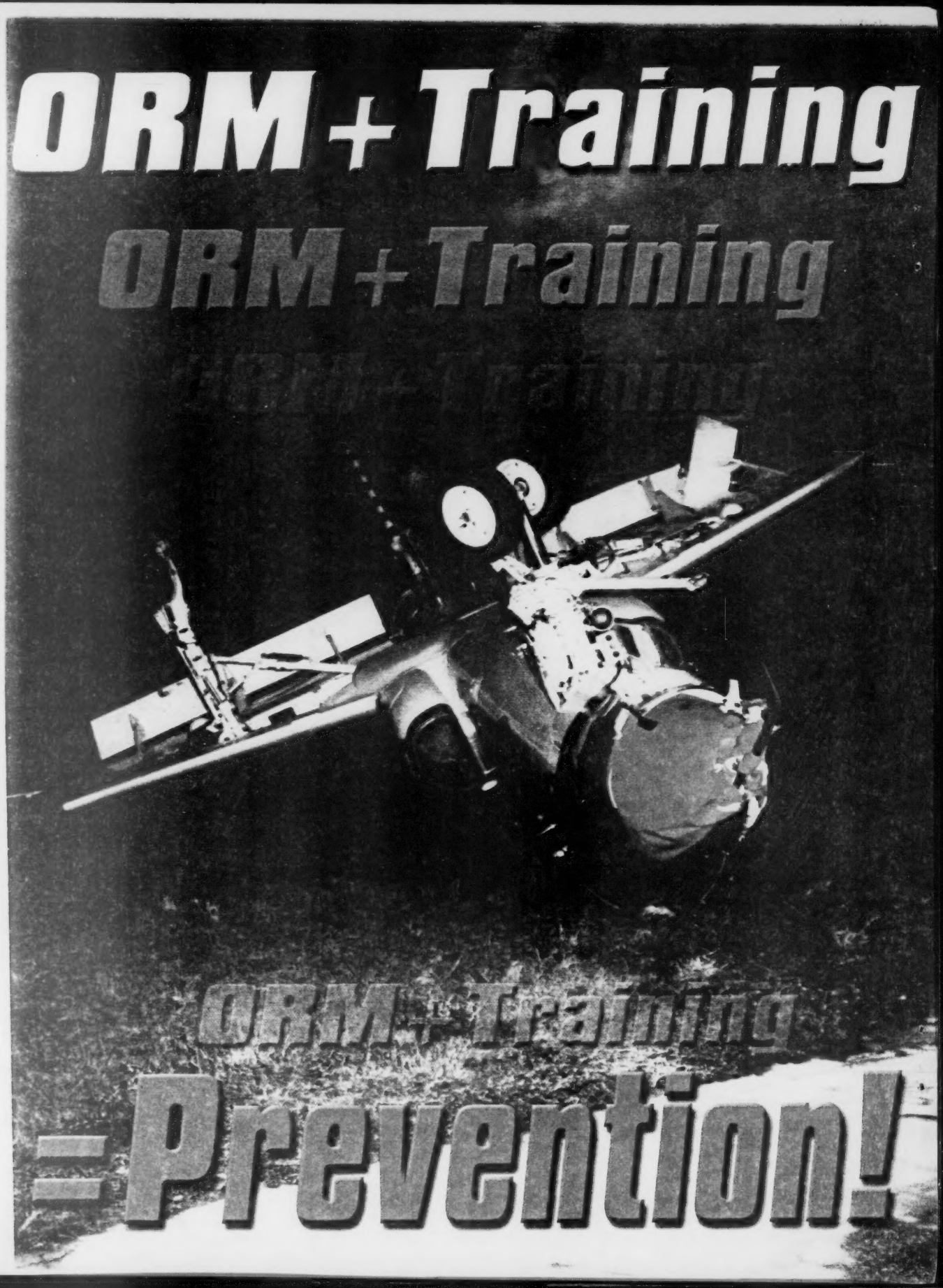
My own inattention to detail taught me to preach attention to detail. Focus and concentrate on every aspect of every flight. When the hair stands up on the back of your neck, it's time to pay attention, no matter how inexperienced you are. Ask someone with more experience and talk to maintenance. Though it's rare that a plane will paint you into a corner and fail so suddenly, if it does, you'd better know immediate action items cold because you won't have time to think, only time to react.

I soon made my final two flights. That day, my mother pinned on my Wings of Gold.

Ltjg. Brush flies with VFA-147.

On Cat 1

COMING ATTRACTIONS FOR JULY


ORM + Training
ORM + Training
ORM + Training
= Prevention!